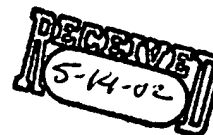U.S.S.N. 09/449,001
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AMENDMENT

IN THE SPECIFICATION

Please amend page 6, lines 14-23 to read as follows:

Specifically, Figure 1 depicts one embodiment of system according to the invention wherein a roaming subscriber, depicted in Figure 1 by the subscriber phone unit 12, is capable of roaming into different server markets, including different types of server markets, and being provided prepaid communication services by a prepaid platform that can communicate with the roaming subscriber. For purposes of illustration, Figure 1 depicts this system 10 as a functional block diagram that illustrates a subscriber phone unit 12, a mobile switching center (MSC) 14, a local signal transfer point (STP) 16, a home STP 18, a location register 20, a database 22, an external Home Location Register (HLR) 24, a prepaid service platform database 28, and a prepaid service voice node 30. Figure 1 further depicts the Home market 32 as being separated from the Serving market 34 by the dashed line.

Please amend page 7, line 16 to page 8, line 2 to read as follows:

Figure 1 further depicts that the system 10 can include a Home Location Register (HLR) 24 of the type employed with cellular networks, and can further include a prepaid call processing platform 28. The prepaid call processing platform 28 can be any suitable prepaid platform including the C_2C prepaid call processing platform manufactured and sold by the assignee hereof. The prepaid platform 28 may act as a centrally located database that includes information about the accounts of each subscriber of the prepaid system. This account information may include for each subscriber the amount of funds available to that subscriber, as well as other account information, such as any free calling time available to that subscriber, and other such information. This account information may be stored information. This account information may be stored in a database 38 that comprises part of the prepaid platform 28. The prepaid platform 28 may also comprise a rating engine 40 that processes the account information for a subscriber and determines from the account information a time interval representative of the number of minutes the subscriber can talk for. Other methods for regulating the call may also be practical.

Please amend page 8, lines 4-8 to read as follows:

In the serving market 34, a prepaid voice node is present that is capable of processing a call for a prepaid subscriber. The prepaid voice node 30 is capable of connecting a prepaid subscriber to a communication network, such as the PSTN, and is capable of regulating the call

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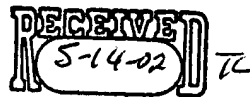
as a function of the time interval determined by the prepaid platform 28. Thus, the prepaid voice node acts as a switch that connects the subscriber through the MSC 14 and on to the PSTN.

Please amend page 9, lines 1-20 to read as follows:

It will also be seen that the system 10 of Figure 1 includes a database 22 that communicates with the LR 20 and that can store subscriber profiles for use by the system, as well as a look up table that includes information for resolving for a given serving market the associated class of market. For example, the LR 20 can store a table that distinguishes between two types of serving markets, those serving markets that have a prepaid voice node and those that do not. By way of illustration, it can be seen that the serving market 34 has a prepaid voice node 30. Thus, as will be shown below, the LR 20 may modify the subscriber profile to instruct the switch MSC 14 to pass the subscriber's call to the prepaid voice node 30. In contrast, turning to Figure 2, a system 50 can be seen, which is similar to the system 10 however the serving market 56 lacks a prepaid voice node. Instead, with system 50 a prepaid voice node that can be employed by the system is located in the home market 54. Thus, the LR 20 will adjust the subscriber's profile to employ the prepaid voice node 52 in the home market 54. Thus, the system divides markets into classes based on the system's ability to control call processing. The depicted database 22 may be any suitable database system, including the commercially available Microsoft Access database, and may be a local or distributed database system. The database 22 may be supported by any suitable persistent data memory, such as a hard disk drive, RAID system, tape drive system, floppy diskette, or any other suitable system. The system depicted in Figure 1 includes a database device 22 that is separate from the LR 20, however, it will be understood by those of ordinary skill in the art that in other embodiments the database device 22 may be integrated into the LR 20.

Please amend page 9, line 22 to page 10, line 8 to read as follows:

In operation, the subscriber of the prepaid cellular service has a mobile telephone unit 12 that has associated with it an MIN and ESN as well as an NPA/NXX which identifies the subscriber as a prepaid cellular user. When the subscriber signs up for cellular service, a subscriber service profile is stored for that subscriber in a database maintained by the home carrier MSC for that subscriber, or alternatively in a centrally located database, such as the external HLR 24. The subscriber's service profile can include data indicating that the MIN is allowed to originate calls while roaming, that the MIN can dial internationally, that automatic call delivery is active and that the MIN is associated with other such services. Other types of information can also be associated with the subscriber's service profile and all such information

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is deemed to be within the scope of the present invention. The data carried in the profile tells the switch MSC 14 how to handle the caller. For example, the data in the service profile can tell the MSC 14 to route the caller to a prepaid platform or to deny the caller the ability to originate or receive a call. The codes, parameters or other information contained in the service profile that will effect operation of the switch can vary depending upon the application and the programming of the switch MSC 14.

Please amend Page 13, line 10 to page 14, line 5 to read as follows:

Turning back to Figure 3, the LR 20 will return the modified profile to the MSC 14 to complete the validation and registration process for the subscriber. The operation of the system turns on the class of the serving market. Figure 4 depicts the operation of the network for a serving market that includes a prepaid platform. Continuing with the example presented in Table 1, the LR 20 will modify the profile to set the parameter "ORIGINATION INDICATOR" to 3. This modification is understood to provide the MSC 14 with an instruction to forward the subscriber to the prepaid platform within that serving market, such as the prepaid platform 30 of the serving market 34 depicted in Figure 1. Thus, when the MSC 14 checks the visitor location register to get the roaming profile for the subscriber, the MSC 14 sees a profile that has the "ORIGINATION INDICATOR" set to 3, which optionally can be the setting for all prepaid traffic handled by the MSC 14. Therefore, as shown in Figure 4, the serving MSC 14 will route the prepaid roaming caller along with all other prepaid callers to the local prepaid system 30. The prepaid system 30 can act as a voice node that controls the call processing for the subscriber. In one practice, the prepaid system 30 accesses the prepaid database and rating engine 28 to determine for that subscriber the interval of time available to the subscriber given their account information. As discussed above, the prepaid database and rating engine can be a centrally located system that can be accessed by any prepaid platform voice node in any serving market. In one practice, the prepaid platform 30 employs the MIN, ESN, the dialed number and NPA/NXX numbers provided by the MSC or other element to access account information from the central database 28. However, in those systems where this and other such information is not provided, the prepaid platform can request that the subscriber reenter this information to provide the rating system with the information for collecting the account information and for performing the rating process.

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Please amend page 15, lines 6-15 to read as follows:

It will be noted that for an HLR provided roaming market, the LR 20 will pass through any messages provided by the HLR 24. Thus, the LR 20 will pass directly to the HLR 24 registration requests that are not for prepaid subscribers. As described above, there will also be other messages that the LR 20 will need to "pass through", such as deregister messages, to either the HLR 24 or the serving MSC 14. This allows the markets to employ sections of the profile for proprietary purposes. Optionally, these operations apply not only to roamer registration requests, but to any message, including ANSI-41 messages, in which a subscriber profile or subscriber status is requested. In a further optional practice, the LR 20 may store the subscriber's location, that can in turn be passed to the HLR 24 down to the lowest level of granularity supported.

Please amend page 15, line 18 to page 16, line 4 to read as follows:

Figures 6 and 7 depict call delivery also known as call termination methods, for use with a roaming prepaid subscriber. Specifically, figure 6 depicts a data flow diagram that shows how the systems of the invention allow a roaming prepaid subscriber to receive an inbound call when that roaming prepaid subscriber is in their home network. Specifically, figure 6 depicts that an inbound call, such as a call form a land line within the serving market, can be forwarded to the gateway the home market. In this example, the prepaid subscriber is in the home coverage area and has registered with that coverage area. the gateway forwards the call to the prepaid platform such as a prepaid platform 28 depicted in Fig. 1. The prepaid platform makes a subscriber location request from the location register 20. The location register 20 requests the subscribers location from the home location register 24, that can be part of the home gateway system. The HLR 24 responds to the LR 20 with the subscribers location and the LR 20 provides that information to the prepaid system 28. The prepaid system can than complete the call to the roaming subscriber within the home coverage area. The prepaid system 28 can than perform call processing as described above wherein funds in the account associated with the subscriber are used to determine a time interval for the call.

Please amend page 16, lines 6-18 to read as follows:

Turning to Figure 7 a call delivery method for a roaming subscriber, that is a prepaid subscriber that is outside of the home market is depicted. Specifically, Fig. 7 depicts that an inbound call, such as a call from a landline, can be delivered to the home market for the prepaid subscriber. In this case, the home market will route the prepaid call to the prepaid system. Here the prepaid system will make a subscriber location request to the location register 20. The HLR 24 will respond with the subscribers location. The location register 20 will then provide the

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location of the subscriber to the prepaid system 28. Here the prepaid system 28 may request a TLDN for performing call deliver. The LR 20 can set a parameter within the user profile such as a field termination allowed of the roaming profile, for the duration of one call. The LR 20 obtains the TLDN from the VLR and the VLR returns the TLDN to the LR 20. The LR 20 delivers the TLDN to the prepaid system and the home MSC completes the call and rates the call accordingly. In this way, a roaming prepaid subscriber can receive incoming calls in a serving market.

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